

5 The notion of home context may vary depending upon specific embodiments of the invention. In this example, the term “context” or “home context” is defined by a specific level (e.g., right indentation level in the example hierarchy shown in Figure 3) in the hierarchy in conjunction with a common listing of representations of objects at that level (i.e., at the same location in the hierarchy). In other words, what is meant by a common listing of two objects having the same context is the existence of two or more representations of objects in the same level and at the same location in the object hierarchy. As an example with respect to Figure 3, under the UNIX group representation 354 the representations 355 through 357 of UNIX host and storage system resources are each shown in a fully qualified manner using both simple names and homes of the corresponding objects 302-11 through 302-13 in the object hierarchy 301. The resource manager 121 displays the representations 355 and 356 in a fully qualified manner as “BIGBERTHA@HOSTS” and “BIGBERTHA@STORAGE” since the simple name “BIGBERTHA” would not serve to uniquely identify each of these resources in the context of being displayed together (i.e., in the same location and level) under the UNIX group representation 354 within the representation 151 of the object hierarchy 301 in the graphical user interface 150.

10 Directing attention now to the representation 357 of the volume object “VOL001@BIGBERTHA#1,” two unique aspects of embodiments of the invention are illustrated by this representation 357. In particular, this example embodiment of the resource manager 121 includes the home of the volume object “BIGBERTHA” in the representation 356 because there are multiple objects 302-13 and 302-22 that represent volume resources that have the simple name VOL001. As such, if only the simple name VOL001 were used in the representation 357, the user would be unaware of which particular volume resource was being referenced.

25 In addition, the representation 357 illustrates an example operation of embodiment of the invention which appends a suffix to the end of the home 305 of an object in the event that a home condition also indicates that there are multiple home resources that have the same simple name. Specifically, the resource manager 121 in Figure 3 appends a suffix “#1” to the home “BIGBERTHA” in order to uniquely identify

which specific "BIGBERTHA" home resource with which the volume resource VOL001 is associated. This is because there are two BIGBERTHA home resource representations 357 and 352. In other words, this embodiment of the resource manager 121 can append a suffix to the end of the home of an object within the graphical user interface 150 if the resource manager 121 determines that the home 305 is not unique within the object hierarchy 301. The suffix "#1" in this example indicates to the user 108 that there are multiple BIGBERTHA home resources that the computer system 110 can represent and thus the user might want to check to be sure which instance of VOL001 is represented by the representation 356.

In one embodiment of the invention, a user action such as moving a mouse over the representation 356 can trigger the resource manager 121 to provide a tool tip or pop up window which indicates or provides a more detailed explanation of which particular volume resource VOL001 is being referenced at this location 356 within the graphical user interface 150. The pop-up or tool-tip might present the full path name of the VOL01 resource within the object hierarchy 301. Generally then, embodiments of the invention can assign a suffix to the home of an object if the home of the object conflicts with a home for another object within the computing system environment, such that the homes of each object will be different from each other.

Other aspects of the example representation 151 of the object hierarchy 301 include the ability to convey different types of relationships between the same representations of objects by groups or grouping. In particular, the example representation 151 of the object hierarchy includes an area 380 that conveys physical relationships between resources represented by objects 302 in the object hierarchy 301. In addition, software, logical or operational relationships are conveyed to the user by the representations in the area 381 that categorizes or groups resources according to different operating system types that those resources operate. Finally, in the area 382, representations of resources are arranged by organizational, department or user functions. Specifically, within the area 382, resources are arranged by projects and users associated with those resources. It is to be understood that a resource manager 121 configured according to embodiments of the invention can allow a representation of a single resource

to appear in multiple locations within the entire representation 151 of an object hierarchy 301. This is referred to as groups or grouping in embodiments of this invention.

As an example of grouping, a user is able to create an object 302 that does not represent a physical resource but rather represents a group of such resource. The user can then populate the child objects field 322 of that group object 302 with references to actual physical or logical resource objects 302. Stated generally, a group object and representation thereof can contain reference to any number of child objects 302 in the object hierarchy 301, some or all of which may correspond to resources or other groups of resources.

As a specific example with respect to the graphical user interface 150 in Figure 3, the representation of the group object MISSILES 358 is defined under the representation of the group object PROJECTS 359 and is also defined or referenced at location 360 as a member of MORRIE'S GROUPS 361. Notice that the representation 360 of the MISSILES group is shown in a fully qualified manner since this representation 360 is out of its home context and that there is a second representation of an object 362 that also contains the simple name "MISSILES." As such, the resource manager 121 of this embodiment of the invention indicates to the user 108 that the representation 360 "MISSILES@PROJECTS" refers to the MISSILES representation 358 rather than the MISSILES representation 362.

Using the aforementioned techniques of simple names, homes of object, grouping and suffixes, a resource manager 121 configured according to embodiments of the invention is able to provide representations of objects which are unique in the context in which they are displayed within a graphical user interface 150 and which also provide a short concise way to indicate to user 108 which resource is being referenced by the particular representation. Furthermore, such embodiments allow a single resource to be represented by multiple representations in different locations within a graphical user interface 150 while ensuring that the user 108 can identify which resource is being referenced at a specific location in situations where there are either multiple resources having the same simple name or in situations where it might not be completely intuitive for a user to know which resource is being referenced.